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WWU response to BEIS consultation on Energy Future System Operator

Thank you for the opportunity to respond to the consultation. Wales & West Utilities is a gas transporter serving 2.5 million supply points in Wales and south-west England.

1. Do you agree that net zero will create the need for new technical roles in the electricity and gas systems, and require a new approach to energy system governance?

We agree – increased integration between systems is inevitable and it would be beneficial to build a resource pool of people who are multi-skilled in the operation of gas and electricity systems and can appreciate the opportunities offered by each and the impacts of changes on the operation of one system on the other. Consideration should be given to expertise from the operation of distribution systems also who are significantly impacted by many of the net zero changes.

Moving forward it is increasingly important that network development strategies take account of whole system impacts recognising the interactions between different energy vectors. From a gas perspective decarbonisation through a transition to increased use of hydrogen either as a blend or 100% has significant implications on the design, configuration and operation of our networks and commercial systems, Future strategies will need to fully recognise these requirements to ensure co-ordinated development of systems.

2. Do you agree that the establishment of a Future System Operator is needed to fulfil the kinds of technical roles needed to drive net zero?

As noted in the introduction, the role gives SO 'unparalleled insight into how each system operates'. This means that they have an important contribution to make in working with the rest of the network business (in this case National Grid) to ensure that the system is built operated and maintained in the best way. From our experience in Gas Distribution System Operation, input from our control room engineers is also vital in the development of commercial arrangements and customer contracts because they can provide insight as to what customers want and how commercial contracts may influence behaviour and impacts on the network.

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As a result we believe that if an FSO were to exist it will be essential that there is significant interaction between those SO activities and the asset owners. Any reduction in current levels of interaction could lead to inefficiencies.

Whilst we would support the development of an FSO we have concerns around timing. There are likely to be skills shortages if we are to duplicate roles in an FSO and in the networks and resources are already stretched to meet the significant workloads associated with system transformation and decarbonisation programmes.

3. Do you agree that a Future System Operator should have roles in both the electricity and gas systems?

We agree that an FSO should have capability across gas and electricity in order that they are able to provide balanced views and understand the impact of changes on one system on the other as outlined in our answer to question 1. It is essential to consider the balance of experience around not only gas and electricity but also transmission and distribution in any future FSO so that initiatives implemented on one part of the system do not have unintended consequences on another and also to ensure whole system optimisation.

However, as stated in our answer to question 2 there are risks if real time operation is completely removed from the asset owner particularly as network requirements are changing in response to net zero requirements.

Gas flows slowly through our networks and the majority of work to optimise pressures and ensure security of supply on a day-to-day basis is achieved via the development and implementation of daily operating strategies by our control centre teams. These take account of factors including demand and supply forecasts, maintenance planned for the day and any unplanned constraints / incidents.

4. Do you agree that a Future System Operator should be entirely separate from National Grid plc?

The FSO will need to be separate from network companies if independence is to be achieved and real or perceived bias minimised. However, as described in our answer to question 3, there is a risk that if some activities are moved away from the asset owner, then some processes may be less robust, and some efficiencies will be lost.

This loss of efficiency could have a detrimental effect on the network owner's ability to truly understand the operation of its network. This may lead to duplication of some aspects of system operation across the new FSO and with the asset owner which will have significant impacts on costs and availability of skilled resources.

5. What issues are there with existing institutional arrangements in the UK energy system in relation to system-wide decision-making and planning?

There is significant uncertainty around the strategy and ownership for system-wide decision-making and planning in relation to decarbonisation which is leading to delays in investment needed to support pathways.

There has been little incentive for people to move between roles in gas and electricity and most people are in specialist roles with significant experience one vector or the other.

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The different dynamics of the systems mean that comparison between them can be difficult; for example, the ability to use linepack storage in gas versus the need to instantaneously balance electricity; also the need to develop daily gas strategies and operate to them because gas takes time to get where it's needed whereas changes to electricity system operation can have an instantaneous impact because there is no 'time of flight' issue.

Gas and electricity licences do not currently recognise the other and therefore cross fuel impacts cannot easily be recognised (for example reinforcement). Similarly trading arrangements and pricing can mean that for example, electricity generators are far more influenced by the requirements of the electricity network rather than the gas network because the penalties and costs associated with their connection to the electricity grid are much higher than those relating to their connection to the gas grid.

Multi-vector projects are leading to increased understanding but moving forward the development of training programmes across gas and electricity for people in post and for new apprentices and graduates may help develop a generation of multi-vector experts and remove some of the bias in approaches that otherwise exists.

6. What examples/case studies are you aware of where net zero delivery in one part of the energy system did not adequately account for cross-system impacts or costs?

Price signals for electricity generation tend to be stronger than those on gas so power generation sites will tend to respond to the needs of the electricity network in favour of the needs of the gas network. Gas generation will often respond quickly when intermittent renewable generation comes on / off and the impact is seen on gas network flows. On most occasions at the moment the gas networks are able to support this sudden response, but future investment may be needed as the instances of this increase and gas supply emergency arrangements for example via the NEC are looking at potential future impacts.

7. Where should government focus in our efforts to improve systems thinking and coordination across the energy system?

We suggest that BEIS need to focus on transparent whole system modelling and trials that allow the different pathways to be tested. The hydrogen village trials will provide essential learning and experience to inform hydrogen strategies but and similar trials for electrified villages considering the impacts of EV charging and consumer support for demand side response would help inform the wider debate.

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8. Do you agree that the FSO should undertake all the existing roles and functions of NGESO? If not, please explain why.

We are not in a position to comment specifically on NGESO roles. However, in order to maintain a balanced FSO it may be desirable to only include the most relevant parts of NGESO rather than increasing the gas roles and functions to be included where this is not beneficial.

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9. Do you agree there is a case for the FSO to undertake the long-term strategic functions outlined in Option 1? Please elaborate and provide any views on the functions we have outlined in Option 1.

It seems reasonable to assume that the FSO will have the best chance of success in driving net zero if it considers whole system solutions which would include the Option 1 activities.

10. Do you agree that there is not currently a case for the FSO to undertake all GSO roles and functions, including real-time gas system operation, as outlined in Option 2? If you do not agree, please explain why.

We agree and have commented above on the benefits offered by keeping real time operation with the network owner; however, there is a risk that in this case with activities weighted towards electricity the focus of the FSO will not be truly whole-system.

Given the ESO is already established it is important to consider how a new whole system FSO would develop as a truly balanced function across gas and electricity and across transmission and distribution.

11. Do you have views on the proposal for an advisory role? What organisations do you consider would benefit from the provision of advice by the FSO? Who should bear the costs of providing that advice?

There will still need to be very close working between network operators and FSO, this is more than an advisory role and shouldn't impose additional costs on current organisations that work with SO including their own networks and other parties. For gas, this would include

- discussions under the Uniform Network Code Offtake Arrangements Document;
- Exit Capacity Planning Guidance; and
- Control Centre to Control Centre discussions.

12. Do you have any views on the other areas where we are considering new and enhanced roles and functions for the FSO (outlined in section 3.2)?

We would recommend that the FSO is developed over time with only the essential roles and functions included at the outset and further consultation as further developments are proposed. This gives the best chance of achieving a balanced gas and electricity function noting concerns we've raised about existing skills shortages and increasing workloads associated with supporting decarbonisation activities.

13. What are your views on our proposed characteristics and attributes of a future system operator and how the models presented would deliver against them? Are there other characteristics or attributes that we have not yet considered?

The key principle should be to develop a balanced FSO with knowledge, skills and capability across all vectors and an unbiased approach towards the assessment and implementation of solutions for decarbonisation.

14. Are we considering the right organisation models for the FSO? And why?

Our view is that the System Operator role has similarities to the role of the Strategic Body envisaged under the Energy Code Reforms consultation. Our view is that the Strategic Body should be performed by Ofgem as a public body and consistent with that view we therefore tend to the view that the System Operator should have a similar organisational structure. A not-for-profit company could be an option but, in a situation where there may be externalities or elements of public goods, then economic theory shows that privately owned companies are not the best organisational model. We do recognise that the existing organisations (NGESO and NGG) are privately owned and that there is a potential consequential impact on Elexon (owned by NGESO) of changes in ownership and these may have an important influence on what is achievable in the time available.

15. Are we considering the right elements for the FSO's regulatory and accountability frameworks? And why?

We agree that the FSO should be funded by industry and then ultimately by consumers broadly in the way it is today. Our primary concern regarding the regulatory and accountability arrangements is that they further a whole systems approach and further achieving net zero. It is important that the evolution from ESO to FSO does not build in an Electricity Transmission bias due to the background of the employees and this should be key focus of the accountability arrangements in the early years of the FSO. Appointment of the appropriate non-executive directors is one way to try and address this issue.

The consultation refers to the FSO's rate of return; our understanding is that since it will be the system operator for electricity and involved in planning for gas and electricity then it will not be making significant investments so it will have minimal assets on which to make a return. We agree that it will need sufficient financial status to be able to make the necessary contracts with other organisations.

16. Do you have views on the level of shareholding or control involving other 'energy interests' and the FSO at which a conflict of interest would become a concern?

For the private model we recognise that significant shareholdings could be seen as posing a risk of undue influence. We suggest that this could be handled by the Articles of Association and reserved matters for shareholders along the lines of what was done when the arrangements for Xoserve were changed in 2017.

17. Are we considering the right implications of our proposals for Elexon and Xoserve?

Yes, we think that the consultation correctly considers the implications for these organisations.

18. What is your view on the preferred implementation approach? Please explain why.

Establishing the ESO as the basis for the FSO is a sensible starting approach. However, where activities need to be duplicated across the new FSO and existing network businesses there is a risk that this will have a detrimental effect on the existing network businesses at a time which is crucial for delivering decarbonisation programmes.

19. Based on the areas where we are considering new and enhanced roles and functions for the FSO, which of these should be prioritised for development? Please explain why.

As described in our response to question 12, we would recommend that the FSO is developed over time with only the essential roles and functions included at the outset and further consultation as further developments are proposed. This gives the best chance of achieving a balanced gas and electricity function noting concerns we've raised about existing skills shortages and increasing workloads associated with supporting decarbonisation activities.

Yours sincerely,



Carly Evans
Head of Regulation
Wales & West Utilities

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